How ADC cycles (polling period) works.

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The Active Directory Connector works based on a polling mechanism instead of a notification mechanism to identify what change on a Directory. This means that every time that ADC wants to identify changes on the Active Directory or in the Exchange Directory, ADC asks for what change since a specified time, instead of being notified by those components when something change. The reason for that are basically two. First, we don't want to loose a notification in case the service is not running at the moment somebody change a user's information, and second, this would cause ADC to work uninterruptedly stressing CPU and the AD.

Every time that ADC starts polling information from one server to another is called Cycle. On a Two Way Connection Agreement, a cycle has two stages. First we search for modifications on the Exchange Server, and after we finished, we search for modifications on the AD server.

To configure the polling period, a user goes to the ADC MMC snap-in, select a Connection Agreement and click on the "Schedule" tab. This will give 3 basic options:

- Never
- Scheduled
- Always

If you select "Never", the Connection Agreement will never run and will not propagate modifications, additions and deletions. This is usually useful if you want to track down a problem and want to "turn off" all CAs but one.

If you select "Scheduled" you have a grid to fill saying when you'd like the CA to run. You can also choose the resolution for the grid if you want increments of 15 minutes or 1 hour. For each box that you fill, it means that ADC will start the polling at that moment, but it doesn't mean it will last only 15 minutes or 1 hour. Basically, what you're saying is when you'd like ADC to start polling, and ADC will only stop once it is finished.

Also, if you select two polling periods adjacent in 15-minute resolution, and the first cycle takes longer than 15 minutes, ADC will ignore the second period and continue its work that started on the first period.

Finally, if you selected "Always" ADC will keep searching for modifications on both Servers every 5 minutes.

If one cycle has a lot of modifications, additions and deletions to do, we could easily stress the Active Directory with ADC-only searches, modifications, additions and deletions. Causing other programs that depend on AD to work very slowly. To avoid such situation, ADC has a mechanism called “Sync Sleep Delay”. This mechanism cause ADC to pause each Connection Agreement after 5 minutes of consecutive replication, sleep for another 5 minutes, then resume replication.

The values for the sleeping and for the continuous sync, can be changed using Registry Keys.

Under HKLM\System\CurrentControlSet\Services\MSADC\ Parameters you can add the following values:

“Sync Sleep Delay (secs)” – REG_DWORD

“Max Continuous Sync (secs)” – REG_DWORD

The “Max Continuous Sync (secs)” defines the maximum amount of time that ADC will replicate uninterruptedly. If you change this value to 1200 (20 minutes), ADC will work for 20 minutes, then sleep for 5 minutes, work another 20 minutes and so on. Remember, this will only take effect if you have a fairly big amount of modifications being done. If in the current cycle, only a few entries have to be modified, ADC will do the replication and finish before we hit the “Max Continuous Sync (secs)”, thus not triggering the mechanism.

The “Sync Sleep Delay (secs)” defines the amount of time that ADC is going to sleep after we reach our “Max Continuous Sync (secs)” and also the amount of time that it’ll take to start the next cycle. For example, if you change the “Sync Sleep Delay (secs)” for 60 (1 minute), and you set your Connection Agreement to schedule “Always”, we will start a new cycle and search for modifications on both servers every 60 seconds. Also, if you have a lot of modifications to do, that would be longer than the “Max Continuous Sync (secs)” of 5 minutes, ADC will replicate for 5 minutes, sleep 1 minute, replicate 5 minutes sleep 1 minute, and so on.

Both Registry Keys are loaded when the service starts, so you need to re-start the service for them to take effect.

These RegKeys should be used very carefully because they can degrade performance on the Exchange Server and on the Active Directory, with few or none improvement for the replication.